

## WE CLAIM:

1           1. A method of autoclaving a container in which a  
2           shiftable plunger defines a compartment filled with a fluid, the  
3           method comprising the step of:

4                 confining the container in a pressurizable chamber;  
5                 heating the container in the chamber and thereby  
6           changing a pressure in the compartment of the container;

7                 monitoring the pressure in the compartment of the  
8           container and generating an output corresponding thereto; and

9                 varying pressure in the chamber around the container so  
10          as to be generally equal to the monitored pressure in the  
11          compartment of the container.

1           2. The autoclaving method defined in claim 1 wherein  
2           the pressure is monitored by monitoring movement of the plunger  
3           as the container is heated.

1           3. The autoclaving method defined in claim 2 wherein  
2           the pressure is monitored by a pair of light curtains flanking  
3           the plunger, the pressure in the chamber being increased when the  
4           plunger moves across one of the light curtains and decreased when  
5           the plunger moves across the other of the light curtains.

1           4. The autoclaving method defined in claim 2 wherein  
2 the pressure is monitored by detecting the distance between the  
3 plunger and a fixed sensor.

1           5. The autoclaving method defined in claim 4 wherein  
2 the distance is detected optically or by ultrasound.

1           6. The autoclaving method defined in claim 5 wherein  
2 the distance is detected optically by means of reflection or the  
3 Doppler effect.

1           7. The autoclaving method defined in claim 1 wherein  
2 the pressure is monitored by providing a pressure sensor exposed  
3 to the fluid in the container.

1           8. An apparatus for autoclaving a container in which a  
2   shiftable plunger defines a compartment filled with a fluid, the  
3   apparatus comprising:

4           a pressurizable chamber in which the container is  
5   confined;

6           pump means for pressurizing the chamber;

7           means for heating the container in the chamber and  
8   thereby changing a pressure in the compartment of the container;

9           means including a sensor for monitoring the pressure in  
10   the compartment of the container and generating an output  
11   corresponding thereto; and

12          control means connected to the sensor and to the pump  
13   means for a varying pressure in the chamber around the container  
14   so as to be generally equal to the monitored pressure in the  
15   compartment of the container.

1           9. The autoclaving apparatus defined in claim 8  
2   wherein the sensor monitors movement of the plunger as the  
3   container is heated.

1           10. The autoclaving apparatus defined in claim 9  
2 wherein the sensor includes a pair of light curtains flanking the  
3 plunger, the control means increasing pressure in the chamber  
4 when the plunger moves across one of the light curtains and  
5 decreasing it when the plunger moves across the other of the  
6 light curtains.

1           11. The autoclaving apparatus defined in claim 9  
2 wherein the sensor detects the distance between the plunger and a  
3 fixed sensor.

1           12. The autoclaving apparatus defined in claim 8  
2 wherein the sensor operates optically or by ultrasound.

1           13. The autoclaving apparatus defined in claim 12  
2 wherein the sensor operates optically by means of reflection or  
3 the Doppler effect.

1           14. The autoclaving apparatus defined in claim 8  
2 wherein the sensor is exposed to the fluid in the container.

1           15. The autoclaving apparatus defined in claim 14  
2 wherein the container has a wall and the sensor projects through  
3 the wall.

1           16. The autoclaving apparatus defined in claim 14  
2 wherein the container is a syringe having a tip cap and the  
3 sensor projects through the tip cap.